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ABSTRACT

A study was conducted to compare the reading levels of beginning students in a two-year community college with the readability levels of the materials they are required to read in selected courses. Subjects, all the students enrolled at an open door community college in Tampa (Florida), took the Nelson-Denny Reading test. Readability levels of thirteen textbooks used in courses at the college were analyzed by the Dale-Chall formula (1948). Results showed that the students' mean vocabulary score was 12.9 and the mean comprehension score was 11.1; that five of the textbooks have a readability level of 16+, four have a readability level of 13-15, three have a readability level of 11-12, and one has a readability level of 7-8; and that, when comparing reading levels and readability levels and employing a one-year differential, only one text--the literature anthology--would be a functional instructional tool. There thus appears to be a gross discrepancy between reading levels of junior college students and the readability levels of their assigned textbooks. (JM)

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A Comparison of the Readability Level of Text Materials With the Reading Level of Community College Students

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Introduction

The concept of the junior college is an institution unique to the American educational system. The implementation of the open door policy in many junior and community colleges, in an effort to solve diverse problems for the students of varying academic, social, economic, and aspirational needs, created other types of curricular problems not experienced by the Ivy League schools which demand rigorous entrance requirements. The assumption that a student enters college able to learn traditional college work is, in large part, no longer valid (Beldin, 1971, p. 19). One of these problems which instructors of the

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open door community college have encountered is that of the students lacking sufficient skills for handling the textbooks and other reading materials essential for mastery of their disciplines.

The purpose of this report (which is a part of a continuous on-going study at our institution) is to compare the reading levels of beginning college students in a two year community college with the readability levels of the materials they are required to read in selected courses. Research findings were primarily concerned with identifying the reading levels of students as they enter the two year community college in order that a comparison could be made with the readability levels of textbooks which were selected as the required text in various courses. It is purposed that there is a critical need for a more realistic relationship between the reading levels of entering students and materials which they are expected to read. Belden (1962) stated that if course materials are on a level above the reading skill of the students, frustration, anxiety, and failure result. He maintained that without doubt the relationship between the difficulty of material and the reading ability of the students present one of the most pressing problems for those who rely upon printed materials for learning experiences.

At one time in American society, a vast majority of colleges had minimal entrance requirements which students who were to enter college were expected to meet. Although little research was conducted in which reading test scores from a standardized instrument were compared with reading levels of texts utilized in courses, it may be realistically

assumed that students who achieved at a high scholastic level also had high levels of ability in comprehension and vocabulary levels.

Method

In the fall of 1973, a study was made of readability levels of thirteen textbooks utilized in courses at Hillsborough Community College, an open door college located in Tampa, Florida. It soon became apparent that texts being evaluated were beyond the reading abilities of many of the students for whom these texts were intended. In order to verify this belief, a comparison was made between measured reading levels of students as shown by the Nelson-Denny Reading test and the readability levels of texts when analyzed by the Dale-Chall Readability formula (1948). All students who enroll at Hillsborough Community College were required to take the Nelson-Denny Reading Test, Form A (1960). This test is administered by a certified psychometrist in the Testing Room at the college as a part of the overall orientation to the college in which all students were required to participate upon their initial matriculation. The subjects included for this study were the total population of students who enrolled at Hillsborough Community College in the fall of 1973 regardless of when the test scores were obtained.

Results

The total number of students enrolled at Hillsborough Community College for the fall term of 1973 and who were included in this study was 6838. Of this population, the mean vocabulary score on the Nelson-Denny was 12.9 and the mean comprehension score was 11.1. These results seem to be quite consistent with earlier studies reported by Hadley (1959),

READABILITY LEVELS OF ASSIGNED TEXTBOOKS

Discipline	Readability Formula Score	Corrected Grade Levels
SOCIOLOGY	9.75	13-15 (college)
ENGLISH HANDBOOK	8.2	11-12
ENGLISH GRAMMAR	10.3	16+ (college graduate)
EDUCATIONAL PSYCHOLOGY	9.543	13-15 (college)
SOCIOLOGY	10.5106	16+ (college)
GENERAL PSYCHOLOGY	9.292	13-15 (college)
GOVERNMENT	10.469	16+ (college graduate)
EDUCATION	10.9135	16+ (college graduate)
PHYSICS	9.0	13-15 (college)
LITERATURE (Literature) (Instructional)	6.23 9.0524	7-8 13-15 (college)
WRITING HANDBOOK	8.190	11-12
NUCLEAR MEDICINE	10.398	16+ (college graduate)
HOTEL MANAGEMENT	8.57	11-12

McClellan (1971), Hagstrom (1971), and Halfter (1958).

In a study of 358 college students, McClellan (1971) discovered that, of 20 college texts studied, eight had readability level scores of 16+ (college-adult level), practically eliminating the utility of these books at the junior college level. She further reported that three of the eight texts were selected for use by students in non-academic or remedial-type courses. She contended that the probability existed that texts used in lower-level and/or non-credit type courses were written on a more difficult readability level than those used in the courses for college credit. Hagstrom (1971) studied 121 students in five different occupational courses and found that more than two-thirds of them were reading below their grade level. He recommended that a look be taken of the actual reading ability range of a representative class.

Of the thirteen textbooks shownin the table, five have a readability level of 16+, four have a readability level of 13-15, three have a readability level of 11-12, and one has a readability level of 7-8. A cursory look at the comparisons of the readability levels of these texts and the reading levels of the students employing a one-year differential between readability levels and reading levels would indicate that only one text, the literature anthology, would be functional materials as instructional tools for this population. Ironically, during the analyzation of this material, the observation was made that there was a range from grades 5-6 to 16+ between one sample and the

next consecutive tenth-page sample. A closer look at this material revealed that these higher levels were of samples randomly selected that occurred in the teaching aids which the editors had included either at the beginning or the end of the units. To satisfy a matter of curiosity, the samples were divided between the literature and the teaching aids. Of the 41 samples studied in this text, which had a readability level of 7-8, three of the samples for instructional purposes were at the 13-15 grade level, thereby eliminating the utility of these aids with this population.

The instructor of a freshman college physics course recently requested that the text being used in his class be analyzed because his most frequent complaint from his students was that they could not read the physics book. As shown in the table, the raw score as determined by the Dale-Chall Readability formula was at 9.0 which is the lowest range of the 13-15 (college) readability level. On the surface, this may not appear too incompatible with the grade level in which these students were enrolled. However, we must remember that the writers of the formula being used admitted that the reader's purpose in reading and his interest and background in the subject matter must also be considered by anyone using a readability formula. To say that a

given article on chemistry is comfortable reading for average adults because it has a predicted grade level of 7-8 is giving an incomplete picture. For those readers who have no interest or no background in chemistry, the article will probably not be comfortable reading and they may get very little meaning from it even though those readers who are interested in chemistry and do considerable reading in the subject may find the same article to be most comfortable reading. These differences in ease of reading and comprehension may exist even though both groups have the same general reading ability as measured by a standardized reading test.

If this generalization may be applied to a physics text, and the assumption be made that inasmuchas these students are in a first year physics class, they may have little background and/or interest in the reading matter.

Inasmuchas the Nelson-Denny reading scores were available for these students, the scores were placed in rank order according to their vocabulary score. Of the 29 students in the physics class, only 5 had vocabulary grade placement scores above 14.0 grade level. An additional 8 students had vocabulary scores on the college freshman level (their grade placement) but even this showing was not high enough to meet the criterion set for the adequate utilization of a textbook as reported by Mallinson (1954). Furthermore, one student of the five scoring high on vocabulary had a low comprehension score

on the reading test, making the text too difficult for his reading ability. Therefore, only four students out of the 29 can be said to possibly be functionally capable of handling this textbook as an instructional tool.

Conclusions and Recommendations

In conclusion, there appears to be a gross discrepancy between the reading levels of junior college students and the readability levels of their assigned textbooks as indicated by this study and other related studies.

Even though instructors may utilize various additional learning aids and media in their courses in this age of technication, the heavy burden of learning still comes from reading the printed page. Therefore, the readability level of a textbook with its accompanying study aids should be taken into consideration with the reading level of the students who will be using these materials.

Publishing houses could do much to facilitate the work of school people if they would employ a readability index, student aids, and other factors of readability, and make these facts known to the instructors using these materials.

And, finally, to those of you who wish to argue the merits of the Dale-Chall or any of the other readability formulae, we would like to challenge you to develop an easier, more reliable technique for determining the readability of a text. We would like to use it!

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